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First records of the Gull-billed Tern, *Gelochelidon nilotica* (Gmelin, 1789) (Aves: Sternidae), from Rio de Janeiro state, Brazil

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Abstract: Here we report the first documented records of the Gull-billed Tern, *Gelochelidon nilotica* (Gmelin, 1789), from Rio de Janeiro state, on the coast of southeastern Brazil. The species was recorded in Sepetiba Bay, in Rio de Janeiro municipality, in August and September 2014 and September 2015. In all cases, the birds had full nuptial plumage, which suggests breeding in the austral spring and summer. This is inconsistent with the possibility of a migrant from the Northern Hemisphere. The regular monitoring of the coastal environments of this region should provide more conclusive insights into seasonal patterns and the migration routes of this species.

Key words: bird; distribution; migrant; Sepetiba Bay; coast of southeastern Brazil

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The Gull-billed Tern, *Gelochelidon nilotica* (Gmelin, 1789), belongs to the family Lariidae, which comprises 21 genera and 101 species found mainly in coastal areas or inland bodies of water (Burger et al. 2016). The foraging behavior of the Gull-billed Tern is very distinct from that of other terns which plunge-dive for fish. The Gull-billed Tern swoops or dips to the surface to catch aquatic and terrestrial prey, including invertebrates, such as small crabs, crayfishes, insects, and vertebrates (such as fish, lizards and amphibians) (Molina et al. 2014; Gochfeld et al. 2016). These terns usually feed on the wing and will rarely come to the ground to forage (Molina et al. 2014). They breed mainly on coastal plains, including barrier beaches and dunes, salt marshes, salt pans, and also man-made islands in rivers, freshwater lagoons and hypersaline lakes. The species winters on estuaries, lakes and salt pans (Gochfeld et al. 2016).

The Gull-billed Tern is widely distributed, mostly as winter or breeding visitors in Europe, Asia, northwest Africa, Australia, and the Americas. North American birds winter along the Gulf Coast, the Mexican Pacific coast and Central and South America. In South America, it occurs on the Atlantic coast of Brazil, Uruguay, and Argentina, and on the Pacific coast, it is found in Colombia, Ecuador and Peru (Molina et al. 2014). This tern comprises six subspecies (Molina et al. 2014), and the two of them found in Brazil are *G. n. aranea* and *G. n. gronvoldi*. *Gelochelidon n. aranea* has a medium grey mantle, pale blue-grey rump and tail with paler outer rectrices, outer web of primaries grey and bill conical, while *G. n. gronvoldi* differs by having a pale grey mantle and rump, and white outer web of primaries, and the bill tends to be deeper (Gochfeld et al. 2016).

Gelochelidon n. gronvoldi occurs from French Guiana to northeastern Argentina, while G. n. *aranea* is a long-distance migrant which breeds in the United States, Mexico, and Caribbean, and overwinters in Central America, Peru and Brazil (Gochfeld et al. 2016). De Luca et al. (2006) concluded that *G. n. gronvoldi* may be a year-round resident, with two disjunctive populations, one found in Guyana, Suriname, French Guiana and northern Brazil (Amapá and Pará states), and the other in southern Brazil (Santa Catarina and Rio Grande do Sul), Uruguay and Argentina. *Gelochelidon n. aranea* is known to winter along the coast of Central America, Brazil and Peru (Gochfeld et al. 2016; BirdLife International 2015).

While most distribution maps indicate the whole Brazilian coast as an overwintering area for the Gull-billed Tern (Gochfeld et al. 2016), this is based on four specific records, two in northeastern Brazil and two in the southeast (NatureServe 2002). Despite being recorded throughout the year in northern and southern Brazil, there is an information gap on the east coast (Wikiaves 2016). Records from the eastern coast of Brazil include a female from Peruíbe, São Paulo state, deposited at the Zoology Museum of the University of São Paulo under catalog number MZUSP 35357 (Olmos et al. 1995) collected on 11 April 1952, and one individual observed in the Santos-Cubatão mangroves on 29 September 1996 (Olmos and Silva e Silva 2001).

There is also a recent record from Lagoa Santa, Minas Gerais state, where the species was observed in seasonal lakes of the São Francisco basin, nearly 400 km from the eastern coast of Brazil (Nóbrega et al. 2015). The Gull-billed Tern breeds in the Amazon estuary in northern Brazil in August (Sick 1997), and may nest further inland in November (Kirwan et al. 2012). Evidence of breeding was recorded in northeastern Brazil (Rio Grande do Norte state) in April to July (Azevedo-Junior et al. 2004), and in southern Brazil (Rio Grande do Sul state) in October (Maurício et al. 2013) and November (Antas 1991). Except for the northern coast, the Gull-billed Tern is considered to be uncommon in Brazil, although there is little information on its current status (De Luca et al. 2006). In this paper, we document the first records of this species in Rio de Janeiro state, Brazil.

Twenty-six field trips for the inventory of waterbirds were carried out on Sepetiba beach (22°58′47.4″ S, 043°42′13.2″ W), Rio de Janeiro municipality, Brazil, using binoculars and a still camera. Fieldwork was conducted each fortnight between 17 November 2013 and 2 November 2014, with additional visits from January to September 2015.

We recorded a single adult Gull-billed Tern at Sepetiba Bay, on 24 August 2014 (12:26 h) and 7 September 2014 (13:30 h) in mixed flocks that included Cabot's Tern, *Thalasseus acuflavidus* (Cabot, 1847), and the Royal Tern, *Thalasseus maximus* (Boddaert, 1783), Great Egret, *Ardea alba* Linnaeus 1758, and the Kelp Gull, *Larus dominicanus* Lichtenstein, 1823. The Gull-billed Tern individual observed had breeding plumage (Sibley 2000), and was identified by the black crown and nape, pale body, black, robust bill and legs, pale grey mantle and white rump (Figure 1). We confirmed the identification of the species using Sibley (2000). In both records, the individual was resting in the intertidal zone, and was observed for 10 min each day. No details of the plumage provided clues for the identification of the subspecies.

To our best knowledge, our records are the first documented evidence of the occurrence of the Gull-billed Tern in the state of Rio de Janeiro (Figure 2). Considering that the recent record from Minas Gerais likely represents individuals deviated from the northeastern coast moving inland along the São Francisco River (Nóbrega et al. 2015), and that the specimen from São Paulo was collected more than six decades ago, our records are the most recent evidence of the occurrence of the species on the coast of southeastern Brazil. On 9 and 13 September 2015, a Gull-billed Tern was observed by R. Czaban and E.A. Ferreira (pers. comm.), in the same area we documented in September 2014, suggesting that this species occurs in this region during the late austral winter.

Our records coincide with the timing of the seasonal migrations of *G. n. aranea* to its overwintering grounds on the Brazilian coast (Gochfeld et al. 2016), although this subspecies is not known to reach as far south as southeastern Brazil (including Rio de Janeiro) and is known only from northern South America (Molina and Erwin 2006; Molina et al. 2014). In any case, the birds observed in Sepetiba Bay had full, fresh breeding plumage in August and September, which would be consistent with reproduction in the austral Spring and Summer, and would be inconsistent with the possibility of these birds being migrants from the Northern Hemisphere. In southern Brazil (for example, Rio Grande do Sul), where migrants are rare, Gull-billed Tern is usually observed with full breeding plumage in the early Spring (L. Bugoni, pers. comm.), with a breeding colony being recorded in November 1986 at Lagoa do Peixe (Antas 1991), and a nest in October 2011 in coastal dunes between Tramandaí and Cidreira (Maurício et al. 2013). Without morphometric

Figure 1. Adult Gull-billed Tern, *Gelochelidon nilotica*, with breeding plumage, recorded in August-September 2014 (left) and September 2015 (right) at Sepetiba beach, Rio de Janeiro municipality, southeastern Brazil. Photographs: Roberta Guido (left) and Robson Czaban (right).

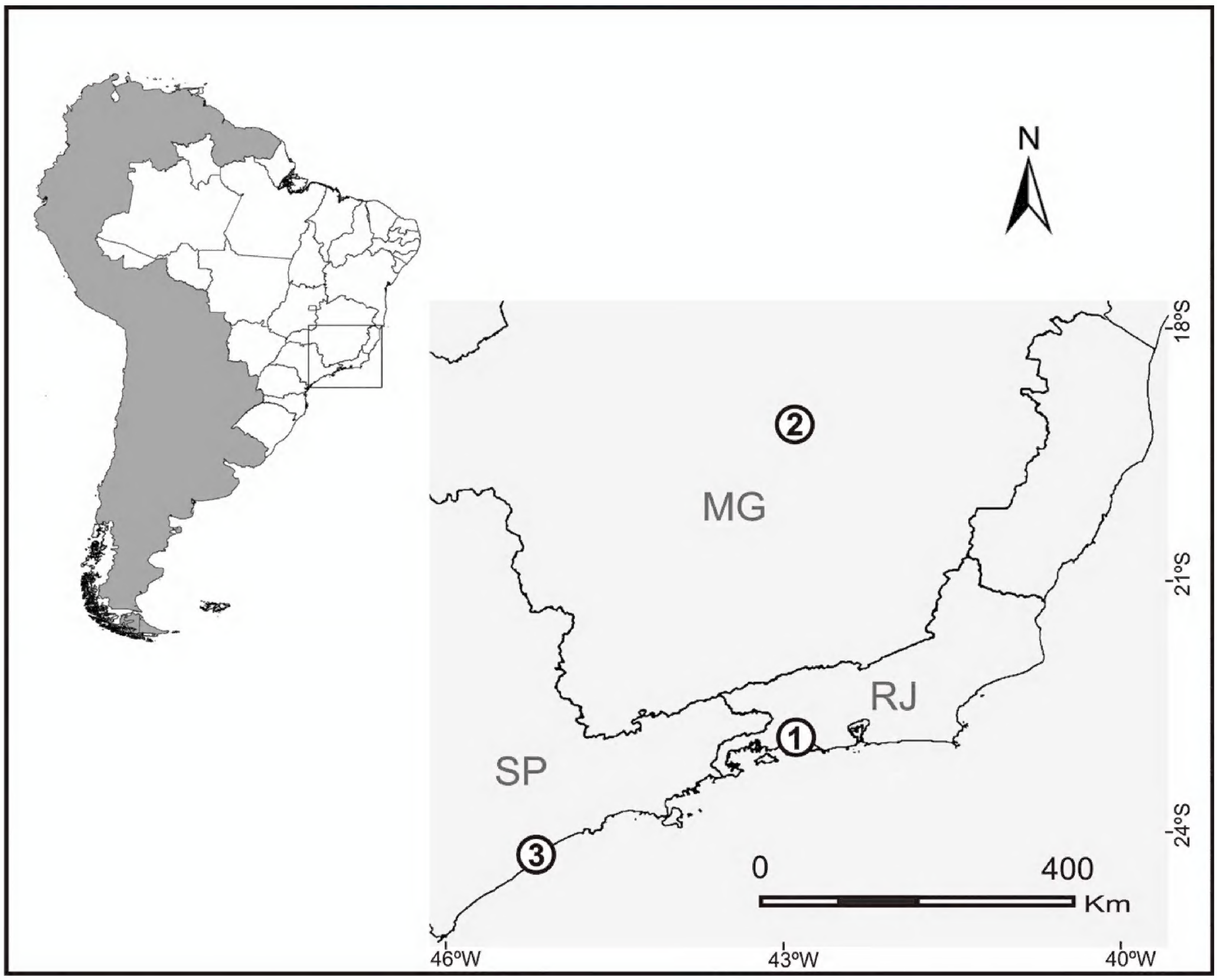

Figure 2. Documented records of the Gull-billed Tern, *Gelochelidon nilotica,* in the states of southeastern Brazil: 1, Rio de Janeiro – RJ (present study); 2, Minas Gerais – MG (Nóbrega et al. 2015); 3, São Paulo – SP (MZUSP 35357).

data and a detailed analysis of the plumage, identification of the subspecies can be no more than tentative, although the sum of the evidence appears to indicate that it is not *G. n. aranea*. In addition, the three Gull-billed Tern skins from the southeastern coast of Brazil (which lack a collecting date or locality) deposited at Museum of Comparative of Zoology of Harvard University were identified as *G. n. gronvoldi* (GBIF 2015), suggesting only this taxon occurs in this part of Brazil.

Although Sick (1997) indicated that the Gull-billed Tern occurs in Rio de Janeiro state, and F. Olmos and J.F. Pacheco (cited by De Luca et al. 2006) mentioned that the species supposedly occurs in abandoned salt pans and coastal lagoons in the Cabo Frio region, no records, dates or localities were provided. Our data thus represent the first documented evidence of this tern in a state that is one of the best inventoried for birds in Brazil (Alves et al. 2000), but still has many information gaps (Alves et al. 2009), which may be more pronounced in coastal habitats. Given this, the systematic and continuous monitoring of the coastal environments of Rio de Janeiro, including the capture and banding of individuals, will be required over the medium- to long-term in order to determine the seasonal patterns and migration routes of the Gull-billed Tern in the region.

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